

INNOVATIONS IN EDUCATION

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ABSTRACT

Exploring, researching and using all the possible tools and equipment to find something new is called innovation in education. It is done by researchers, students, teachers, public people and people of various industries. Higher level of thinking process of student is utilized to develop creativity and skills in solving the problems. This article explains some of the innovation which is recently included in education.

KEYWORDS: Innovation it is the Process of Discovering, Inventing and Introducing New Ideas, Strategies, Methods or Devices

Article History

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INTRODUCTION

Innovations in education technology makes learning easy and enjoyable. Education should ensure much learning within the least amount of time. Innovation in teaching helps students with different learning styles and motivates the students to involve themselves more in the learning activities. Major innovations include e- textbooks, social media apps, gamification, remote learning, artificial intelligence, virtual reality, augmented reality, m-learning, smart boards, cloud based technology in education, moocs etc. Some of the innovations used in educations are explained in this article.

Virtual Reality

With this technology, learners can interact with an artificial three dimensional environment using electronic devices. These devices are supported by audio visual supplements which are attached with a special safety glasses and a screen or gloves fitted with sensors.

Augmented Reality

It is an interactive digital technology which connects the real world environment with the text, images, video clips, sounds, animations and 3D models. Thus it enhances learning and helps the learner create their own content. It helps the teacher to provide a visual representation of the subject. It is not a head mounted display as in virtual reality and it provides more freedom to the user.

Digital Textbooks

Digital textbooks or e-books helps the users in accessing them from anywhere, anytime and cost efficient. They are easy to handle and provide the most recent information.

Social Media Apps

Social media apps are tools which help in direct interaction between the teacher, students and parents. It helps in remote jobs and online classes. You tube, Facebook, What's app, Google Meet, Google class room, Zoom and Dhiksha are the widely used apps in education. They help in sharing information, teaching, forming study group, conducting seminars, forums, conferences etc.

Gamifications

It is the way of making concepts and subjects into games or applying game designs to teach the concepts. It helps the students to learn concepts with fun and ease and engage them continuously in the learning activity (e.g. Abacus).

Artificial Intelligence

Robots are built to teach English (e.g.ENGKEY). Some other robots help students enquire about their moods and they teach students skills like music or dance. It makes the learning task easier and makes knowledge more accessible for students globally. Students can get personalized tutoring. It helps educators identify learning disabilities and students get reliable feedbacks.

Smart Boards

It helps the learner participate in the class most frequently and they can interact with the teacher and peers via tablets and notebooks which make learning easier and fun filled.

Cloud Based Technology

It is a network of remote servers hosted by the internet to store, manage and process data. Online banking and shopping, face book, twitter, and backed up data, google mail, yahoo mail, web mail are some of the examples of cloud based technology.

MOOCS

It is a free online course in which anyone can enrol. It delivers quality educational experience to learners. Top professors provide the learning materials. It is affordable and flexible. Some of the providers are Coursera, edX, FutureLearn, Udacity etc.

Smart Toys for Preschool Children

Smart toys are physical toys which are connected with virtual mediums and can interact with its own mind by artificial intelligence and respond to the external stimulus according to the pre-programmed patterns. They have the ability to enhance the play activities and thus learning. Nursery mobiles, smart watches, smart speakers, role play toys, cozmo vector robots, boxer, and sphero robotics are some of the examples.

3D Printing Technology

It helps educators to create a rich learning experiences. It makes the theoretical constructs into reality and helps the students learn computer into their hands. They can bring any educational concepts to life. For example they can produce airplane parts, prosthetic limbs, 3D printed medications and thus improves learning. It foster the creativity, communication and collaboration among students and tutors.

Biometrics in Education

It uses people's unique physical and behavioural characteristics to identify a person. Educators spot out cheaters and security breaches. Online learners are verified by the educators through facial recognition. It helps in marking the attendance in schools. DNA matching, iris recognition, face recognition, speaker identification, finger geometry, hand geometry, and typing recognition are some type of biometrics. It helps in recording a correct data about an individual.

Automation

It is the process of using mechanical or electronic devices that can do the human labour and using software it helps in scheduling, mark the attendance and even in grading. It helps teachers spend less time on manual work or repetitive task and spend more time with students. Thus it enhances the teaching learning process. It helps in assessing home works, assignments, quizzes and to some extend the test papers. It also provides individualised learning experience to students.

Adaptive Learning

It is the process of using computer and artificial intelligence to interact with the learners in a customized manner to meet their unique needs. This online educational system adjusts the subject and presentation according to the response and the understanding of the students. Though the content is same the system feeds the learner with relevant concepts in such a way that they master in certain areas. It allows the learner pace his or her learning activities by one to one interaction. It leads to competency based education.

Usage of 5G in Education

With the help of IoT and virtual reality, learners are able to avail same classroom experiences any time and from any place through mobile phones or laptops. Educational resources are available to the learners beyond time and distance by the high speed internet.

CONCLUSIONS

Today's education is a best example where we can witness the impact of modern technology. From virtual education and parent teacher communication, e-books, student privacy, online teaching and learning, educational apps, adaptive learning, augmented reality, greater access to learning resources, the involvement of innovative technology in education has no limit. Innovative technology has entered into education and renewed the whole process of teaching and learning. Devices are tailored to digital learners. Thus innovative educational technology improves collaboration between the educators and students and paves way for the learners to make a better tomorrow.

REFERENCES

1. **Yanushkevich.S. et al (2020)** *Emerging Biometrics: Deep Inference and Other Computational Intelligence*. arXiv: 2006.11971v1 [cs.CV] 22 Jun 2020
2. **Antonio Ramon Bartolome (2017)** *Block chain in education: introduction and critical review of the state of the art*. EDUTEC. Revista Electrónica de Tecnología Educativa. ISSN 1135-9250 Num. 61 / November 2017.
3. **John T. Avella et al (2016)** *Learning Analytics Methods, Benefits, and Challenges in Higher Education: A Systematic Literature Review*. University of Phoenix. Online Learning - Volume 20 Issue 2 - June 2016 13

4. **Enaam Karim Abed (2018)** *Electronic Learning and its Benefits in Education*. University of Qadisiyah, IRAQ: EURASIA Journal of Mathematics, Science and Technology Education, 2019, 15(3), em1672 ISSN: 1305-8223 (online)
5. **Plamen D. Petrov * and Tatiana V. Atanasova (2020)** *The Effect of Augmented Reality on Students 'Learning Performance in Stem Education*. Institute of Information and Communication Technologies—Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria; *atanasova@iit.bas.bg*. *Information* 2020, 11, 209; doi: 10.3390/info11040209 www.mdpi.com/journal/information.
6. **Delali Kwasi Dake and Ben AdjeiOfosu (2019)** *5G Enabled Technologies for Smart Education (IJACSA)* International Journal of Advanced Computer Science and Applications, Vol. 10, No. 12, 2019 201 / Page www.ijacsa.thesai.org
7. **Nuri Karaa and Kursat Cagiltay (2020)** *Smart toys for preschool children: A design and development research*. *Electronic Commerce Research and Applications*. Journal homepage: www.elsevier.com/locate/elerap *Electronic Commerce Research and Applications* 39 (2020) 100909
8. **Henry Goh and Baharuddin Aris (2007)** *Using Robotics in Education: Lessons learned and learning experiences*. 1156 1st International Malaysian Educational Technology Convention. <https://www.researchgate.net/publication/255604397>